

SCIENCE FAIR PROJECT IDEAS

Cleaning Water by Filtration	Investigate different ways to remove solid material from water using different types of filters.
Corrosion	Study rates of corrosion of different materials (nails, steel wool, etc.) under different conditions (dry air, moist air, etc.)
Bernoulli Principle	Find different experiments that show how the Bernoulli principle works. This is the principle that provides the lift for airplane wings.
Fingerprints	Study how fingerprints are different. Use students or family to illustrate the different types of fingerprints.
Crystal Formation	Try growing crystals from different solutions. For example, you could use salt, sugar, or Epsom salt.
Ball Bounce	Investigate the difference in height that different balls (tennis, golf, ping pong, etc.) bounce. Do cold or hot balls change their bouncing behavior?
Cantilevers	A cantilever is a projecting beam or structure supported only at one end. Build a cantilever arch and show how it compares in strength to other types of structures.
Surface Tension	Show how surface tension is affected by various materials such as detergents.
Liquid Meniscus	A meniscus is formed at the top surface of liquids contained in cylinders. How is the shape of the meniscus affected by the diameter of the container or by the liquid.
Diffusion in Water	How is the rate of diffusion affected by temperature?

Friction	Study how friction varies with the roughness of surfaces.
String Stretch	Measure how a string stretches as the weight attached to it changes. Does the string stretch more or less when it is wet compared to when it is dry?
Chromatography	Measure the distance different colored inks move on a strip of paper whose bottom is dipped in water. Do some colors move farther than others?
Evaporation	What affects the rate at which water evaporates (for example: temperature, surface area).
Cooling	Measure the cooling effect of a fan. Does the air speed affect cooling? What about the presence of water?
Temperature of materials	How does heating or cooling affect materials?
Electromagnets	Measure the magnetic field of an electromagnet. Does the strength of the field change with the number of coils on the electromagnet or with the number of batteries that powers it?
Erosion	What affects the rate of water erosion (for example, water speed, type of soil)?
Body Temperature	How does exercise affect body temperature?
Molds	What affects the growth of mold on bread? Some things to consider are temperature, moisture, and light.
Frozen water	How does salt or sugar change the freezing point of water? Does adding salt or sugar increase or decrease the temperature at which water freezes?
Peripheral vision	Does a person's peripheral vision depend on age or gender?

SCIENCE FAIR PROJECT

1. Select a project. You may select from the list of experiments provided or choose your own. Your teacher must approve the project.
2. Write a title for your project.
3. Go to the library and collect information on the topic (or topics) which apply to your project.
4. Design your experiment using the scientific method.
 - Purpose
 - Hypothesis
 - Procedure - List of materials; step by step instructions for doing the experiment.
 - Results - Show your data in a table or graph (or both) if you can.
 - Conclusions - Did the results confirm your hypothesis?

What else did you learn?

Could the experiment have been done better?

5. Write a report (1 to 2 pages) which includes your library research.
6. Make a poster or exhibit showing your experiment.

SCIENCE FAIR PROJECT IDEAS

Coffee Rings

Spilled coffee leaves a ring-like stain when it dries. Do other liquids produce rings when they dry? Does it matter if the liquid dries upside down? Why are the rings made? (This is a harder question to answer.)

Coin Flipping Bias When you flip a coin, do you have an equal chance of getting heads or tails? A bias may exist due to an unbalance of the coin. A suggested experiment is to place ten pennies (or another coin) on edge on the table. Hit the table with your hands to cause the coins to fall. Count the number of heads and tails. Repeat at least ten times so that you have 100 trials. Do the number of occurrences of heads match tails?

Crater Formation The moon shows evidence of numerous craters. It was only recently that these craters were proven to be the result of impacts of meteors. Investigate crater formation by dropping steel balls or marbles into sand from different heights. The different heights produce different impact velocities. Measure the crater size (maybe the diameter and the depth). Does wet sand produce different results than dry sand? Is there a relation between the size of the ball and the diameter of the crater?

Corrosion Study rates of corrosion of different materials (nails, steel wool, etc.) under different conditions (dry air, moist air, etc.)

Chromatography Measure the distance different colored inks move on a strip of paper whose bottom is dipped in water. Do some colors move farther than others? Try a different liquid (for example, rubbing alcohol).

Viscosity Viscosity is the resistance of a fluid to flow. Compare how liquids of different viscosities affect the time it takes for a ball to drop through a given height of the liquid.

Friction Measure how frictional force is related to the weight per surface area.

Stain Removal Measure how different detergents remove a stain or how temperature or time affects stain removal for one brand of detergent, or how the concentration of detergent affects the stain removal.

Hard water How does the amount of dissolved minerals affect the

hardness of water.

Electromagnetism How does current affect the strength of an electromagnet?

Sand

Measure the forces a pile of sand exerts at its bottom. Do this by placing sand on a piece of paper that is sitting on carbon paper. The size of the smudge on the paper is related to the force. Are the forces uniform across the paper or are the forces greater near the edge of the sand pile? Sand must be wet in order for the sand grains to stick together. How much water must be added to dry sand to get the sand to stick together?

Model Walker

Build a model walker from Tinkertoys. Observe how it walks down a ramp that has a slight incline. Adjust the design of the walker to see how it affects its walking ability and stability.